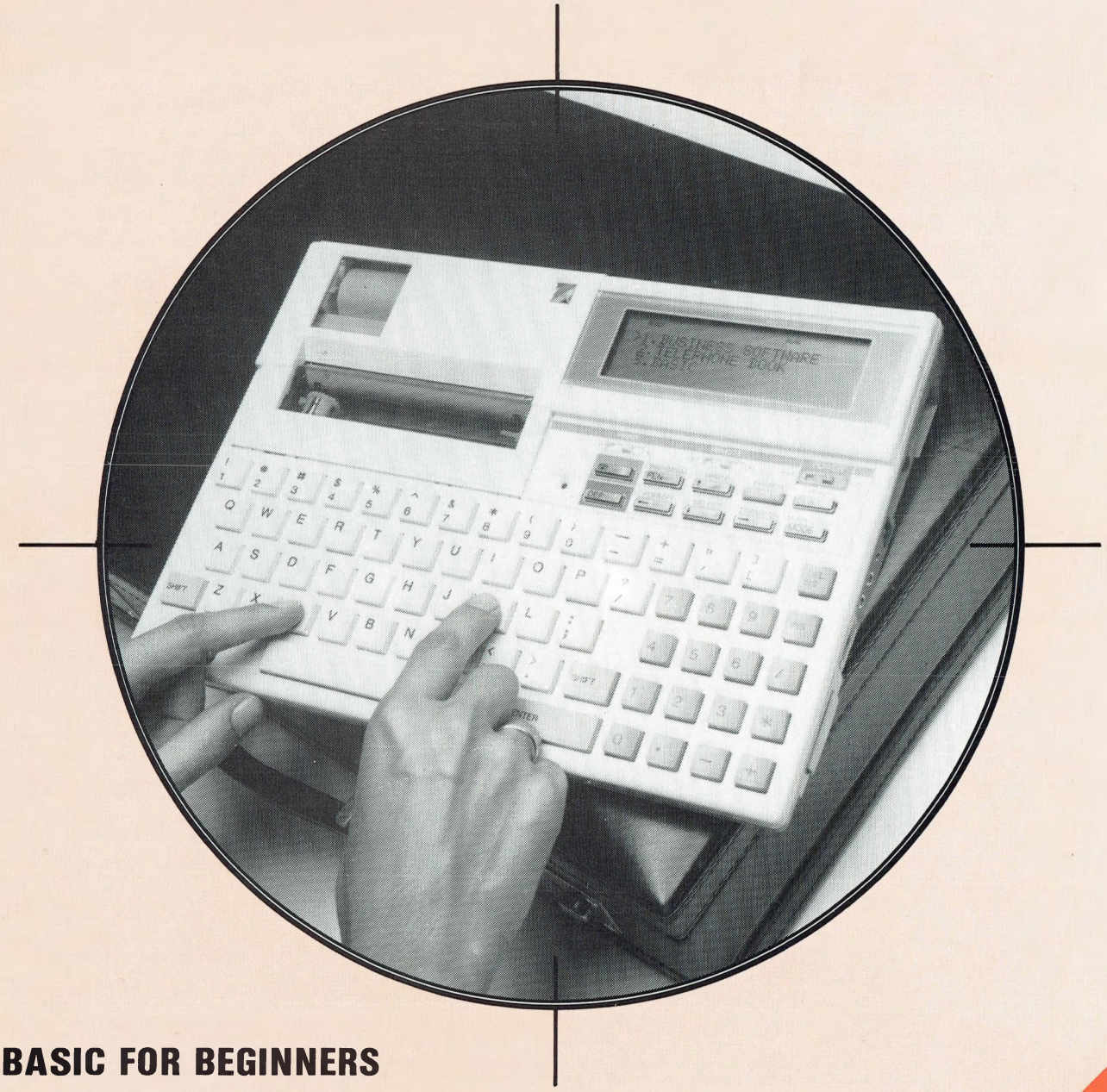
SHARP FOCUS

The Australian Magazine for SHARP Users

Issue Number 1 - July 1985 - $3.50



- **BASIC FOR BEGINNERS**
- **ADVENTURE GAME FOR THE MZ-700**
- **TEXT-FILE UTILITY FOR THE PC-1500**
- **SOFTWARE AND HARDWARE REVIEWS**

NEW

It may surprise you to learn that Sharp, one of the newer names in computers, is one of the only companies in Australia to offer a range of computers to meet your needs wherever you are; with a selection of pocket-size, home, portable and desk-top models outstanding in their function, versatility and reliability. To find out more about the surprising range of Sharp computers phone for the location of your nearest authorised Sharp dealer.

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All enquiries and contacts concerning this Publication should be made to SHARP FOCUS, Shop 2, 33 The Centreway, Blackburn Road, Mt. Waverley, Victoria 3149, Australia. [Telephone: (03) 232 7055].

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Contributions are welcome from readers or other interested parties. In most circumstances the following payments will apply to published material: Letters-$5.00, Cartoons-$5.00 and a rate of $10.00 per page for programs, articles etc.

Contributions will not be returned unless specifically requested coupled with suitable stamped and addressed padded bag (for tapes or disks) or envelope.

I wait with bated breath [illegible]

Ed

MEMORANDUM

To: SHARP FOCUS READERS

Date: July 1985

From: The Editor

Subject: EDITORIAL

Welcome to the first edition of SHARP FOCUS, a new Australian publication which is devoted entirely to the SHARP range of computers, peripherals and software. I doubt you'll find another magazine on the market covering such a specific area.

We shall be keeping a close eye on hardware developments and bringing you up-to-date with upgrades and new releases. The same goes for software, and we will be providing reviews on a regular basis from arcade style games through to business applications.

And that's not all. Each month we will publish programs for specific machines that will entertain you, or assist your programming efforts or even your business. New programmers will not be forgotten either. A series of articles written especially for the novice Basic programmer starts in this first issue (even more experienced programmers will be reminded of a few things).

If that is not enough to whet your appetite and make you rush in your subscription application if you haven't already done so, then the added bonus of User Group Information (including contact points for local groups throughout Australia), Competitions, and hints and tips from readers will surely dispel any indecision.

But, quite clearly, there is a 'treasure trove' of experiences, programs, routines and a mountain of knowledge locked away in Sharp users' minds which needs to be released. SHARP FOCUS is the key, and through its pages featuring user contributions, all will benefit (and remember, we pay for published submissions). So grab a pen (or printer) and send me heaps.

I wait with bated breath for the first Australia Post truck!

Ed

MEMORANDUM

SHARP FOCUS READERS

Date: July 1985

Letters

Letters to SHARP FOCUS should prove to be a rich source of prompts on the Sharp range. Naturally, in the interests of brevity we reserve the right to edit letters, and if you would like a specific response you must include a stamped and addressed envelope.

All correspondence should be addressed to: The Editor, Sharp Focus, Shop 2, 33 The Centreway, Mt. Waverley, Vic 3149.

Firstly, let me congratulate you on the production of this first issue of what promises to be a resounding success. On behalf of the Sharp Computer Users Association, I wish you everything that you would wish yourselves. May your efforts be rewarded by the success that they deserve.

To all users of Sharp computers, let me commend this magazine as your own. Its success will depend on the input you are able to make to it. There is a certain amount that the publishers can do but ultimately the content of a magazine such as this reflects the type of information that you request from the publishers and the articles you send in for publication.

If the magazine is to be a success, you, the user of the machine, **must** transmit your knowledge so that others may benefit. This transmission will rebound and other users will similarly respond, ultimately improving your knowledge.

Finally, let me pass a vote of thanks to Sharp themselves for the support that I know they are providing, in the form of information.

Congratulations Strategy Publications, on taking the initiative and producing Sharp Focus

Arthur Harris, President
Sharp Computer Users
Association

*Thank you for your words of support. As you correctly point out, the success of Sharp Focus depends upon the contributions we receive from users, and to make it more attractive we are offering to pay **real dollars** for published submissions (see inside back cover).* *Ed.*

I own an MZ-700 computer and a Quick Disk. I have managed to transfer most of my tape programs to disk, but I am having problems with the following:

- Machine language games supplied with the computer will transfer but only the first game will run.

- Word processing program from Strategy Software will not transfer at all.

- Cardfile program (Strategy Software) has loading instructions for tape as Load S-Basic, Reset, Press L and CR. This program will not transfer to disk.

Could you please advise if there is a way to transfer the above from tape to disc.

J. & C. Martin, Bucasia, Qld.

To answer your points in the same order:

- Machine Code games supplied with the computer may appear to transfer but, in fact, do not. The reason for this is that each of the games has its own loader, effectively protecting the software against copying. Only the loader is transferred.

- You do not state which word processing program is involved but Strategy Software would be happy to transfer the software to your own disc for a nominal fee of $1 per title to cover postage and packing on receipt of your original tape. Alternatively, they will copy your tape onto a new disc for a fee of $7 plus $1 per title copied. It should be noted that some machine code software has tape read/write routines built-in and it is not possible to change this software to accommodate read/write to Quick Disc.

- A Quick Disc version of Cardfile is available at a cost of $7.50 with your tape version traded in.

I was interested to read an article in the May issue of the SCUA newsletter regarding the CE-515P printer/plotter. There are actually

two models manufactured in Japan, the CE-515P which is intended for domestic sales only and the CE-516P which is for overseas markets. I would like to point out however that the CE-516P is not currently available in Australia.

Steve Jones, Technical Support,
Computer and Systems Division,
Sharp Corporation of Australia.

Software for MZ-700 from SHARP

We understand that Sharp are now distributing software for the MZ-700. A list of 31 titles has been chosen from a range previously distributed by Orbit Software.

The list of titles is shown below and may be further increased with imports from Knight Software in England. The additional titles under consideration are 'Wee Pascal', 'Knights Forth' and 'Expert Machine Code'.

Sharp are also distributing three books for the MZ-700. They are:

'The MZ-700 Explained'
'Peeking and Pokeing the Sharp MZ-700'
'Starting with the MZ-700'

SOFTWARE TITLES

Maths Time	Spelling Time
Education Pack A	Education Pack B
Castle Quest	Music Composer
Zen Editor	W.D. Pro
Competition	Star Avengers
Cosmic Scramble	Xanagrams
Ladders	Rope Runner
Painter	Moon Buggy
Droid Wars	Grid Bugs
Dark Star	World Cup
Chess	Backgammon
Blackjack	Cribbage
Finance Modeller	Cardfile
Fingertips	Getting Started on the MZ-700
Oscilloscope	
Radioactivity 1	Radioactivity 2

User Group Information

Each month we will provide as much space as is necessary to promote existing Sharp User groups and help establish new ones.

Our aim is to publish the Names, Suburbs and Telephone numbers of people who are, or would like to be, contact points for specific groups.

Readers, who may otherwise not be aware of a group in their locality, will get in touch with the contacts. Similarly, any enquiries we receive can be referred to the contact points.

In order to take advantage of this opportunity to advertise the existence of your group free of charge (or to start a new group), all interested parties are invited to submit the following details:

Name of Group, Association or Society
Address of regular meeting place (include Post Code)
Date of each regular meeting (eg. 1st Tuesday each month)
Time of regular meetings (eg. 8.00p.m. to 10.30p.m.)
Activities - including the range of equipment normally used
Special interest sub-groups (if any)
Name, Address and Telephone number of contact points

Naturally there are deadlines for each edition of SHARP FOCUS. Without making any promises, any details received by the 15th of each month will normally be included in the next months publication.

Please send your submissions directly to The Editor, SHARP FOCUS, Shop 2, 33 The Centreway, Mt. Waverley, Victoria 3149.

Silent Byte

Solving a sound problem

If your FROGGER no longer croaks or your telephone doesn't ring when playing MR FIXIT, we have the answer.

The addition of a Quick-Disk to the MZ-700 causes the location of the sound generator values in BASIC programs to move.The POKEs change from 2167 and 2168 on cassette to 2837 and 2838 on disk.

It can obviously be a rather boring and tedious job to carefully search through the listings of your favourite BASIC programs to find every occurrence of the sound POKE and physically change it, so we provide a small sub-program to locate the 2617's and 2618's in a listing and change them.

Here is how it is done using FROGGER as an example.

First load the Disk BASIC.

Type in the POKE CHANGER program

Type SAVE "POKE CHANGER"
Saves POKE CHANGER to disk

Type LOAD "CMT:FROGGER"
Loads FROGGER from cassette

Type MERGE "POKE CHANGE"
Adds POKE CHANGER to FROGGER

Type RUN 65000
Runs POKE CHANGER program

Type DELETE 65000 - 65100
Deletes POKE CHANGER

Type SAVE "FROGGER"
Saves amended FROGGER to disk

Type RUN

And that's all you have to do to convert FROGGER to the disk version. Do exactly the same with any BASIC program. There is no danger of over-writing the main program as none of the solo Software programs use the area from 65000 to 65100.

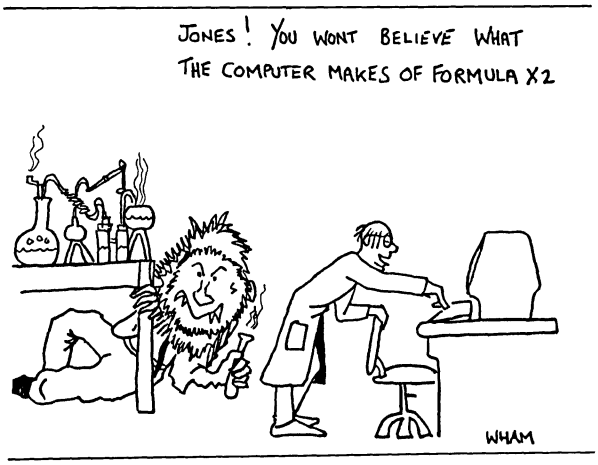
Just one item where care is needed. If you are converting a program where line numbers 2167 or 2168 are used, the POKE CHANGER will also change these. To avoid the danger of this happening, just before you type the MERGE "POKE CHANGER" command, type

LIST 2617-2618

If no line numbers appear, there is no problem.

If, however, there is a program line used with either of these numbers, simply type RENUM1,1,1 which will renumber the program in increments of one line, therefore avoiding the higher line number areas.

```
65000  COLOR,,7,0:CLS:T = 65000 - SIZE
65010  PRINT "CHANGING SOUND
       POKES"
65020  FOR N = 27599 TO T
65030  IF PEEK(N) = 21 THEN GOSUB
       65050
65040  NEXT:COLOR,,7,1:CLS:END
65050  IF PEEK (N+1) <> 140 THEN
       RETURN
65060  IF PEEK (N+2) <> 35 THEN
       RETURN
65070  IF PEEK (N+4) <> 0 THEN
       RETURN
65080  IF PEEK (N+5) <> 0 THEN
       RETURN
65090  IF (PEEK (N+3) <> 144) * (PEEK
       (N+3) <> 160) THEN RETURN
66095  USR (62):PRINT "CHANGING AT
       LOCATION ";N
65100  POKE N+2,49;POKE N+3,PEEK
       (N+3) - 64:RETURN
```



Review of the PC-2500

by David Saunders

What a delight it was to open the beautiful carton of my new PC-2500!! I unpacked a magnificent looking piece of equipment accompanied by an attractive manual, another tape recorder lead for my collection, another EA-150 AC adaptor, pens and paper.

I double-checked the carton to find the computer's cover. That proved fruitless!! Of course the machine is designed to be carried in a briefcase so Sharp may have felt that a cover is pointless. Admittedly, I don't carry hot soldering irons around in my briefcase but often have angular pieces which can do surface damage to the machine. I wish that Sharp had spent a little less on the disposable external carton's printing and included a simple, zippable-vinyl wallet in lieu.

As the very proud owner of a PC-1500, I was staggered by the magnificent full-size keyboard - bigger even than suggested to me by the leaflet. Having used a PC-1350 I was aware of the large display and its capabilities. I also knew what to expect from the 114mm wide printer/plotter as I drive one off my PC-1500. All of this in one package with no dangling wires and peripherals had strongly influenced my purchase decision and I do not regret that decision after six weeks use.

It is good to see that the power switch is a positive push-left-for-off, push-right-for-on type. It saves the accidental touching of the push-button type as on many other computers. But why must the printer/plotter go through the seemingly needless reset routine every time that switch is used? It is not deemed necessary with the Auto Power Off operation. There are many times that I wish to switch the computer off before shifting it somewhere after breaking a program midstream. The sooner that someone publishes the address to be called to actuate the auto power off switching, the happier I'll be.

Upon power-up, a three item menu:-

>1. Business Software
2. Telephone Book
3. Basic

appears on the screen. It is only necessary to touch the appropriate key to go into the desired type of operation. There is no need to move the cursor up or down, no need to press enter. Why does the manual even bother to mention those slower options? It takes about a second after pressing the "3" button to be in RUN mode. Don't feel distraught if you've pressed "1" or "2". It takes about five seconds to get there so allow for a bit of a stroll round whilst waiting!!

The variable contrast display is a very good plus and the annunciators at the top of the screen are very clear. All up it's an excellent display.

A check of the manual for an alphabetical listing of the basic keywords by page numbers proved fruitless. Pages 105 to 210 give excellent descriptions of the keywords; their abbreviations; allied keywords and the purpose, use and examples of the keywords, but no index!! The keywords are arranged alphabetically in six separate sections. Those sections are:-

(i) Commands (where that command is not also a verb),
(ii) Verbs (including commands that are also verbs),
(iii) Functions :
  a) pseudo-variables
  b) numeric
  c) string
(iv) Graphic related commands,
(v) Serial I/0 related commands,
(vi) Text function related commands.

Now isn't all of that easy? Spend about a solid year or two at learning BASIC and you might be aware that "SAVE" is a serial I/0 related command but that "CSAVE" is a command. Just as a niggle, I would put "CSAVE" in the verb category as, by the manual's definition, it works within a program - but I digress. With the above layout it is quite an adventure to find "LLIST." It actually appears as a command on page 112 and, surprise, as a serial 1/0 related command on page 196!! I don't believe therefore that I am being unfair in saying that this aspect of the manual is dreadful.

I decided to check the "telephone book" aspect of the computer. The manual is very good when the correct page is found and

I had no trouble in working this function. In fact, to fight back, I used the "telephone book" to build up an index which shows the keywords listed alphabetically with their simplest abbreviations, the relevant page number(s) and the basic token of each keyword. I have stuck this in the back of the manual and have no more troubles in this regard. A sample of this print-out is enclosed and shows that the "telephone book" is a very good system for any type of table - not only telephone numbers.

NAME	TEL.	
ABRV.KEYWORD	PAGE	TOKEN
ABS	175	153
ACS	175	158
AND	048	161
A.READ	121	225
ASC	179	164
ASN	175	157
ATN	175	159
BA.SIC	208	236
B.EEP	123	196
CA.LL		204
CH.AIN	124	229
CHR$	179	168
CL.EAR	126	201
CLO.AD	105	183
CLO.AD?	107	
CLOSE	193	188
CLS	127	206
CONS.OLE	194	191
C.ONT	108	178

The sorting and searching functions are excellent and far faster than might be anticipated. Thus to sort any list, put it into the "telephone book" and fire away. Just a minor shame that Sharp have give the "telephone book" label and not emphasised the versatility in this area. It would be nice to be able to alter the headings from "name" and "tel" to any others required and, no doubt, someone will soon crack this. I am getting close.

Saving to and loading from cassette tape is very easy and fast in either the basic or "telephone book" mode. As an estimate, these operations are something like three or four times as fast as the PC-1500.

I have not, as yet, had occasion to use the "business software". It is, from a perusal of the manual, a spreadsheet. If, as I have no reason to doubt, it as good as the "telephone book" then it will be an excellent facility.

So we have the "basic" mode as the third option. This has been cut down to size-more than could be hoped-to allow for the ROM greedily used by the other two systems. With 72 kbytes of ROM and only 5kb of RAM, a programmer feels a bit short-changed. However this RAM is expandable with brilliant 8kb or 16kb RAM cards. No skills required in their insertion or usage. No funny routines to store the information - programs or data - in the cards beyond one simple operation (mem "C").

I do miss a clock in the machine. I miss the ability to turn the beep function off. I miss "ON ERROR GOTO" which traps operator errors in an established program. I do miss "STATUS" from the PC-1500 when used to its full extent - but I can live without it.

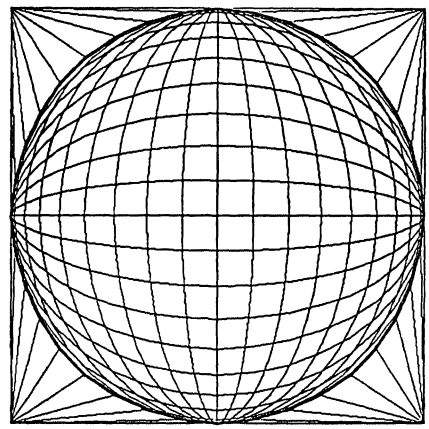
I very much appreciate the password function "PASS" - particularly as I have found where it is stored in case of amnesia. It does save unauthorised copying or tampering by the uninitiated. The ability to password-protect programs within a RAM card is very appealing to those selling commercial programs.

Once learnt, the commands, verbs or whatever are very easy to use and it is no hardship to learn from the manual in spite of its previously detailed shortcomings. This is not to say that one reading of the manual will make a programmer out of a beginner - but that can't be expected.

The graphics on the dot-programmable display are excellent and leave plenty of scope for imagination.

The plotter/printer is excellent with a good tight mechanism. The examples of graphical output enclosed show the machine's versatility and are an indication of the attainable accuracy.

```
HAL-085 DEF 'D' PC-2500
X-COORD ORIGIN  240.
Y-COORD ORIGIN  -250.
COLOUR 0
Radius 235.
```



As a qualitative impression, some of the operations are slower than the PC-1500's and yet some seem faster. One of the magazines will, no doubt, publish where the PC-2500's highs and lows are in operation as quantitative figures. I won't personally be greatly heartbroken whatever results they may give. If I wanted something lightning fast and still portable I would need to tow along my own generator.

The machine is designed primarily to be used for its inbuilt "business software" and "telephone book" by those whose calling or profession may need them. I do feel that calling the spreadsheet function "business software" will deter many technical purchasers who could use that operation just as well as a businessman.

And for those who are into machine code it is all there. Sharp, as usual, are their reticent selves on this aspect of their equipment. Not a mention of a peek passes their lips. They must think it is something to do with peeping toms and not to be discussed in polite society.

With the reservations that I have mentioned before, I feel it is an excellent machine and it will soon worm a place in my heart next to the PC-1500.

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welcomes and supports the new magazine

SHARP FOCUS

and wishes the Publishers every success in their new venture

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Review of HUNCHY

by Philip Riley

Hunchy is a simple graphics game which can successfully get the adrenaline and sweat running. The object of the game is to rescue Esmeralda from a tower, but to get there you must first tackle various obstacles through eight screen levels.

On the first screen, you are required to run along the top of a wall and pull a rope on the right of the screen. It sounds easy, but as you run barrels start rolling towards you and these must be jumped using the space key. Movement across the screen is achieved with the cursor keys.

The second screen has three pits in the wall to jump. This part of the game is probably the most interesting and frustrating as the jump must be timed just right. It will take may tries before you get past this stage. The pits stay until screen 6, but each screen adds something extra for you to get past. Everything from rolling barrels and flying arrows to low flying aeroplanes.

The 6th screen is completely different . Just one large pit with a rope swinging backwards and forwards above it, but more luck than skill is required to make it to the other side. The 7th screen returns to the three pits with the same obstacles as before, although one small change will catch you by surprise. I won't tell you what the change is but it is effective (I panicked the first time I got to this stage and died instantly.) However, once you have played this screen you will find that it is no harder than any of the others.The final screen is rather disappointing. After all the previous screens and obstacles you have been through one would expect something special or at least difficult. But this is not the case, it has less to it than screen 7 and is somewhat easier.

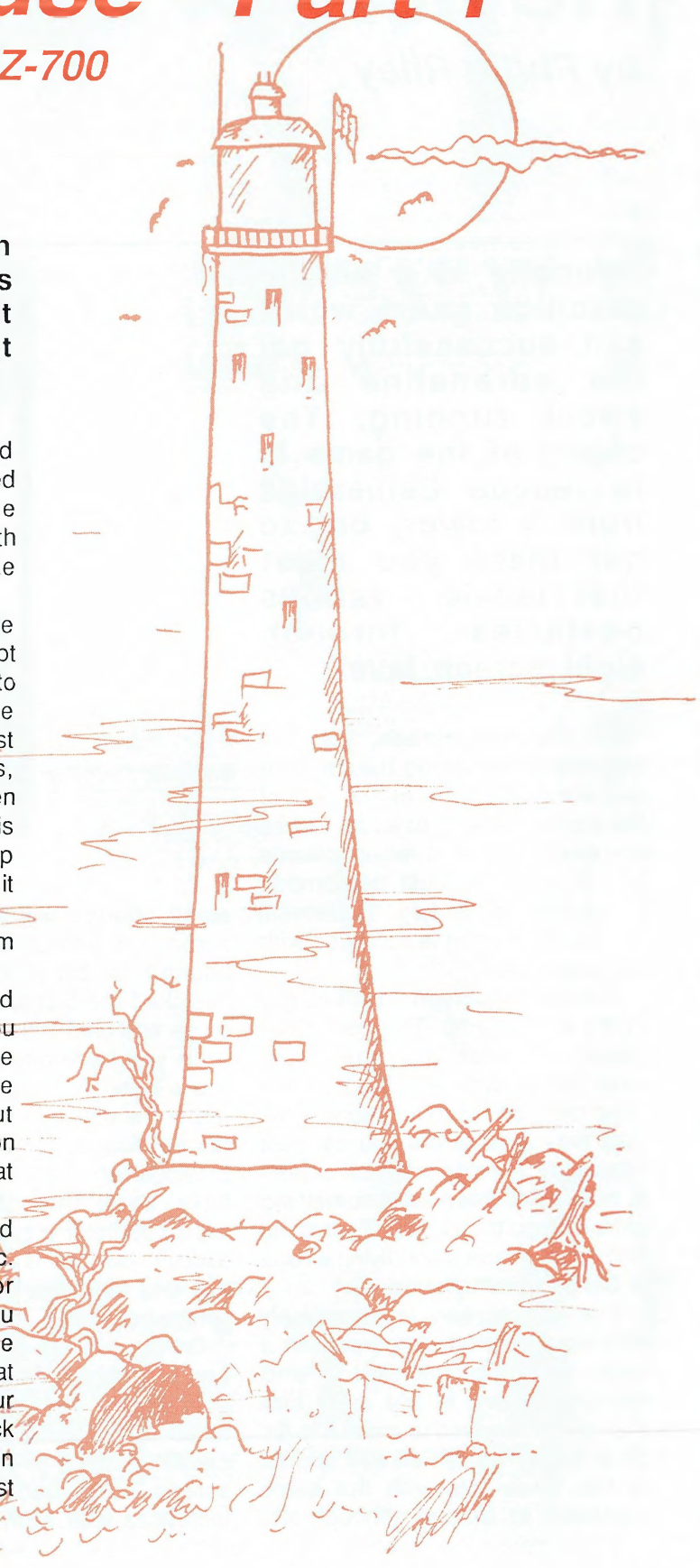
On the whole it is a good game, and the graphics are very well presented. The scoring leaves much to be desired. You score a certain amount of points for each screen completed. This amount increases with each screen, but it also decreases each time you lose a man. When you have saved Esmeralda the game finishes. I feel it would have been better if the game returned to the first screen with the cycle repeated automatically at a faster rate.This would keep interest a little longer. When playing this style of game I like to see how long I can stay alive and how high I can get the score. However , there is an option to play a faster game once you get the hang of the first 'level'.

You start with three men but these are soon used up - perhaps starting with five men would be better.

The game is entertaining and very addictive. It is different to most arcade style games and is well worth considering.

The Lighthouse - Part 1

An Adventure game for the MZ-700



For longer than anyone can remember the old lighthouse has stood on the Island of Lost Souls just off the coast of Southern England. But everyone knows its grim history.

Five keepers of the lighthouse have committed suicide, four have gone mad, four have disappeared without a trace, and two have never reached the lighthouse at all. They vanished forever in the labyrinth of caves which provide the only route into the lighthouse.

You are offered the job as the new keeper of the lighthouse. With some second thoughts you accept and the villagers organise a boat to take you across to the island. It is a cold autumn morning when two of the men from the village row you out through the thick mist that envelopes everything. Suddenly sheer cliffs, hundreds of feet high loom above you. The oarsmen guide the boat towards a small sandy beach which is completely surrounded by the cliffs. As you step ashore one of the men hands you a lantern. The light it gives off is pretty feeble but it is better than nothing.

As the men row away from the island one of them shouts - "Be careful, they say the island is haunted."

You look around at the bleak surrounding and wonder just what you have got yourself into. You contemplate your task before you set off. It won't be easy to reach the summit of the island and light the lamp that is on the top floor of the lighthouse. But someone must do it and you are now the only person on the island, the only person alive that is! It is now that your adventure begins.

The game understands the standard two word commands e.g. 'GET LANTERN', 'FILL LANTERN' etc. Use the cursor keys to move North, South, East or West. To move up or down type in 'UP' or 'DOWN'. You can shorten the two word commands to the first three letters e.g. 'GET LAN', 'FIL LAN'. For a list of items that you are carrying type 'IN'. For a description of your present location type in 'LO'. If you think you are stuck with no means of escape, you can quit by typing in 'QU'. Good luck and don't worry if you don't make it first time.

```
10 CLS
20 PRINT"■■■■                THE LIGHTHOUSE"
30 PRINT"■■■■■■■■          WRITTEN BY PHILIP RILEY"
40 PRINT"■■■■■■■■   PRESS ANY KEY IF YOU DARE CONTINUE."
50 GETA$:IFA$=""THEN50
60 COLOR,,7,0:CLS:N=4:A1$="GETTAKLEADROUSEEXASHABREKILTHRCUTCHOPOUFILD
RIEMPLIGSTROPEGIVUNLSMACLIREDMOVFORENTEXI"
70 A2$="KEYTEABOALANNETBOTCHECROOILBARMATBOSCOMSEXCHALOGLEGLADCARRAZST
RHAMWALCRASEADOOHOLLONGUALAMWEBGRISTOLIGLOCRUMWEE"
80 A3$="LOINHEUPDOQU"
90 G$="YOU ARE IN ":G1$="YOU ARE AT ":G2$="YOU WALK INTO ":G3$="YOU WA
LK ALONG ":G4$="TO THE NORTH":G5$="TO THE SOUTH":G6$="TO THE EAST":G7$
="TO THE WEST":G8$="YOU HAVE ENTERED ":G9$="YOU ARE ON "
100 DIMYP(313),IT(21),IT$(21)
110 FORT=1TO313:READYP(T):NEXT:FORT=0TO21:READIT(T),IT$(T):NEXT
120 DATA0,0,0,13,6,14,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,
0,0,0,0,4,16,6,7,0,0,15,0,0,0,0,0,3,6,16,9,7,1,4,7,0,15,0,0,0,0,0,1,10
,7,0,1,12,12,1,0,15,0,0,0,0,0,1,0,1,3,5,7,3,11,0,15,0,0,0,0,0,12,3,11,
12,1,12,12,0,0,0,0,0,0,0,3,16,16,7,0,1,0,13
130 DATA16,16,0,0,0,0,0,1,0,0,4,7,12,3,16,16,16,11,0,0,0,0,12,3,16,8,4
,16,5,7,0,0,0,0,0,0,0,1,10,7,1,10,7,1,10,7,0,0,3,16,14,0,1,0,12,1,13,1
1,12,2,12,0,0,10,7,0,0,12,0,13,9,16,7,2,1,13,6,7,3,9,6,7,3,6,6,6,7,10,
9,11,2,12,1,1,0,12,1,4,5,5,5,8,0,0,0,4,16
140 DATA5,12,0,0,1,4,5,5,5,8,0,0,0,4,14,4,14,13,7,1,4,5,5,5,8,0,0,0,12
,0,12,0,3,5,11,4,5,5,5,8,0,0,0,0,0,0,0,12,12,2,10,9,9,9,11,0,0,0,13,16
,16,16,9,6,11,0,0,0,0,0,0,0,0,0,0,0,0,3,11,0,0,0,0,0,0,0,0,0,0,0,0,0,1
2,0,KEY,86,TEACADDY,95,BOATHOOK,500,LANTERN
150 DATA6,FISHING NET,4,BOTTLE,126,TREASURE CHEST,92,CROWBAR,204,OIL,1
14,BARREL,0,MATCHES,67,BOSUNS CHAIR,68,COMPASS,183,SEXTANT,97,CHART,25
1,LOGBOOK,181,WOODEN LEG,229,LADDER,187,DECK OF CARDS,235,RUSTY RAZOR,
168,LEATHER STRAP,279,LARGE HAMMER
160 GOTO440
170 PRINT:PRINT[5,0]"WHAT NEXT BRAVE SIR":B$=""
180 GETA$:IFA$=""THEN180
190 A=ASC(A$):IF(A>16)*(A<21)THEN360
200 IFA=16THENB$=LEFT$(B$,LEN(B$)-1):PRINT"■ ■";:GOTO180
210 IFA=13THEN230
220 B$=B$+A$:PRINTA$;:GOTO180
230 FORT=1TOLEN(B$):M$=MID$(B$,T,1):IFM$=" "THEN250
240 NEXT:GOTO310
250 X$=LEFT$(B$,3):Z$=MID$(B$,T+1,3):B=0:C=-1
260 FORX=1TOLEN(A1$)STEP3:B=B+1:IFX$=MID$(A1$,X,3)THEN290
270 NEXT
280 PRINT:PRINT"■I DON'T UNDERSTAND":GOTO170
290 FORZ=1TOLEN(A2$)STEP3:C=C+1:IFZ$=MID$(A2$,Z,3)THEN350
300 NEXT:GOTO280
310 Y$=LEFT$(B$,2)
320 FORY=1TOLEN(A3$)STEP2:IFY$=MID$(A3$,Y,2)THEN340
330 NEXT:GOTO280
340 PRINT:ONYGOTO440,0,2610,0,2640,0,2650,0,2700,0,2750
350 PRINT:ONBGOTO2440,2440,2500,2500,2560,1940,2210,2150,2550,2380,226
0,2260,2410,1680,2350,1880,1780,1750,2590,2310,1630,2150,1840,2570,212
0,2150,2080,2100
360 IF(N=54)*(S2=0)THENPRINT"YOU TRY TO RUN AWAY BUT THE CRAB CATCHESY
OU AND CUTS YOU IN HALF WITH ONE OF ITSGIANT PINCERS.":GOTO1590
```

```
370 IF(N=5)*(S3=0)THENPRINT"YOU TRY TO AVOID THE SEAWEED BUT IT     SE
NSES YOUR MOVEMENT AND WRAPS ITSELF   AROUND YOUR BODY AND SQUEEZES TH
E LIFE  OUT OF YOU.":GOTO1590
380 IFIT(3)<>500THENPRINT"YOU TRY TO MOVE BUT BECAUSE YOU HAVE    LEFT
 YOUR ";IT$(3);" BEHIND YOU CANNOT SEE WHERE YOU ARE GOING. YOU SOON T
RIP OVER IN THE DARK AND CRACK YOUR SKULL OPEN.":GOTO1590
390 IF(A=17)*((YP(N)=1)+(YP(N)=4)+(YP(N)=5)+((YP(N)>7)*(YP(N)<13)))THE
NN=N-15:GOTO440
400 IF(A=18)*((YP(N)>0)*(YP(N)<9))THENN=N+15:GOTO440
410 IF(A=19)*(((YP(N)>2)*(YP(N)<7))+(YP(N)=9)+(YP(N)=10)+(YP(N)=13)+(Y
P(N)=16))THENN=N+1:GOTO440
420 IF(A=20)*(((YP(N)>4)*(YP(N)<10))+(YP(N)=11)+(YP(N)=14)+(YP(N)=16))
THENN=N-1:GOTO440
430 PRINT:PRINT[2,0]"YOU CAN'T MOVE IN THAT DIRECTION.":GOTO170
440 CLS
450 PRINT:ONNGOTO0,0,0,530,540,570,0,0,0,0,0,0,0,0,0,0,0,0,0,580,0,0,0
,0,0,0,0,0,0,0,0,0,0,0,590,600,620,650
460 ONN-40GOTO1540,0,0,0,0,0,850,840,600,790,650,630,660,680,0,1530,0,
0,0,0,0,630,860,650,0,630,640,670,710,0,1520,0,0,0,0,0,630,0,630,810
470 ONN-80GOTO800,650,730,720,0,1510,0,0,0,0,0,640,880,870,820,630,830
,740,0,0,0,0,0,0,0,910,600,890,650,0,630,0,750,600,600,770
480 ONN-120GOTO630,0,0,940,650,640,1100,600,600,600,1090,0,0,0,0,920,9
60,600,950,1040,1080,800,650,0,0,0,0,0,0,0,630,970,650,630,1080,650,63
0,1110,650
490 ONN-160GOTO0,1120,600,750,0,630,0,980,630,640,1090,640,760,740,0,0
,1130,1140,0,0,640,0,980,990,600,650,1020,630,980,1190,650,1160,790,12
50,650,1400,1410,1410,1410,1420
500 ONN-200GOTO1000,1010,1030,1230,1200,630,630,0,640,1260,1430,1440,1
450,1450,1460,0,0,0,1220,600,800,1170,0,0,1270,1430,1450,1450,1450,146
0,0,0,0,1240,640,1210,980,980,1320,1290
510 ONN-240GOTO1430,1450,1450,1450,1460,0,0,0,980,0,640,0,1330,800,131
0,1430,1450,1450,1450,1500,0,0,0,0,0,0,0,920,640,640,1470,1480,1480,14
80,1490,0,0,0,640,600
520 ONN-280GOTO1340,600,790,620,1310,0,0,0,0,0,0,0,0,0,0,0,0,0,1370,1360
,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1380
530 PRINTG9$;"THE WESTERN END OF A SMALL   BEACH TOWERING CLIFFS BLOCK
 YOUR WAY    ";G4$;". THE CALM MIST SHROUDED SEAIS ";G5$;".":GOTO1550
540 IFS3=1THENPRINT"YOU ARE ON A SMALL BEACH. YOU CAN SEE A CAVE ENTRA
NCE IN THE CLIFFS ";G4$;"COVERING THE FLOOR IS A LOT OF DEAD     SEAWE
ED.":GOTO1550
550 PRINTG9$;"A SMALL SANDY BEACH  FROM    THIS POINT YOU CAN SEE A SM
ALL CAVE     ENTRANCE IN THE CLIFFS "G4$;".    SUDDENLY YOU SEE SOMETH
ING MOVE BY YOUR FEET. IT IS ONLY THEN THAT YOU NOTICE   YOU ARE SURRO
UNDED BY SOME KIND A DEADLYSEAWEED ";
560 PRINT"DON'T MOVE OR YOU ARE DEAD.":GOTO1550
570 PRINTG9$;"THE EASTERN END OF A SMALL   BEACH. TOWERING CLIFFS BLOC
K OFF FURTHERPASSAGE ";G4$;" AND EAST.":GOTO1550
580 PRINTG$;"A SMALL DARK TUNNEL THAT     SMELLS OF ROTTING SEAWEED. I
TS A GOOD   THING YOU HAVE A LANTERN OR YOU WOULD   NEVER HAVE FOUND Y
OUR WAY THROUGH THESE CAVES.":GOTO1550
590 PRINTG$;"A SMALL CAVERN THAT HAS EXITS";G4$;", SOUTH AND EAST. THE
 FLOOR OF THIS CAVERN IS COVERED IN ROTTING    SEAWEED.":GOTO1550
600 IF(N=280)*(T6<>2)THENPRINT"YOU WALK INTO THE SPIDERS WEB. THE
 SPIDERS INSTANTLY ATTACK YOU. THE POISONFROM THESE SMALL SPIDERS IS D
EADLY AND  YOU DIE A SLOW AND PAINFUL DEATH.":GOTO1590
```

```
610 PRINTG3$;"A SHORT PASSAGE THAT RUNSEAST AND WEST.":GOTO1550
620 PRINTG8$;"A LARGE CAVERN. THE    ROOF OF THIS CAVERN IS SO HIGH TH
AT THE DIM LIGHT FROM YOUR LANTERN CANNOT REACHIT. EXITS ARE ";G4$;",
EAST AND    WEST.":GOTO1550
630 PRINTG$;"A NARROW TUNNEL THAT RUNS    NORTH AND SOUTH.":GOTO1550
640 PRINTG1$;"A DEAD END. YOU LOOK ALL     AROUND BUT CAN FIND NO OTHE
R WAY TO     CONTINUE.":GOTO1550
650 PRINTG3$;"A SMALL PASSAGE UNTIL YOUREACH A SHARP CORNER. YOU CAN M
OVE WEST AND NORTH FROM THIS POINT.":GOTO1550
660 PRINTG$;"A SMALL CAVERN. ";G4$;" IS A DARK AND RATHER CREEPY LOOKI
NG     PASSAGE. BUT ";G6$;" YOU CAN SEE DIMAND MISTY DAYLIGHT POURING
IN THROUGH A CAVE ENTRANCE.":GOTO1550
670 PRINTG3$;"A NARROW PASSAGE UNTIL   YOU REACH A DEAD END. IT LOOKS
AS THOUGHYOU WILL HAVE TO WALK BACK SOUTH.":GOTO1550
680 IFS2=1THENPRINT"YOU ARE ON THE BEACH IN A SMALL COVE.   LOOKING AR
OUND YOU CAN SEE CAVES ";G4$;" AND WEST.":GOTO1550
690 PRINT"YOU WALK OUT OF THE CAVE INTO A SMALL   SANDY COVE. ";G4$;"
AND WEST YOU   CAN SEE CAVE ENTRANCES. YOU DECIDE TO   INVESTIGATE THE
 COVE ALITTLE MORE. YOU  SET OFF BUT BEFORE YOU CAN GET TOO FAR · YOU A
RE CONFRONTED BY A GIANT CRAB."
700 PRINT"DON'T MOVE OR IT WILL ATTACK.":GOTO1550
710 PRINTG$;"A SMALL CAVERN. ";G5$;" YOU CAN SEE DAYLIGHT. ";G4$;" IS
A DARK FORBIDDING TUNNEL.":GOTO1550
720 PRINTG8$;"A MASSIVE CAVERN. IT ISSO LARGE THAT WHEN YOU STAND IN T
HE     MIDDLE OF THE FLOOR THE FEEBLE LIGHT    FROM YOUR OLD LANTERN C
ANNOT REACH ANY  OF THE WALLS.":GOTO1550
730 PRINTG3$;"A NARROW TUNNEL UNTIL YOUCOME TO A SHARP TURN. YOU CAN M
OVE NORTHAND EAST FROM HERE.":GOTO1550
740 PRINT"YOU ARE STANDING AT THE BOTTOM OF A LONGFLIGHT OF UNEVEN STO
NE STAIRS THAT LEAD UPWARDS INTO THE GLOOM.":GOTO1550
750 PRINTG1$;"THE TOP OF A LONG FLIGHT OF  UNEVEN STEPS THAT LEAD DOWN
WARDS INTO   THE DARK AND GLOOMY CAVERNS BELOW.":GOTO1550
760 PRINT"YOU WALK INTO A SMALL CAVE THAT HAS ONLYGOT ONE EXIT. LOOKIN
G AROUND YOU SEE A  SMALL HOLE IN THE FLOOR.":GOTO1550
770 PRINTG3$;"A NARROW PASSAGE UNTIL   SUDDENLY YOU STEP OVER THE EDGE
 OF A    DEEP SHAFT. YOU FALL FASTER AND FASTER  UNTIL YOU FALL OUT OF
 THE SHAFT INTO    OPEN AIR. LOOKING DOWN YOU SEE THE SEA  RUSHING TOW
ARDS YOU. YOU ARE KILLED THE SECOND YOU HIT";
780 PRINT" THE WATER.":GOTO1590
790 PRINTG$;"A LARGE CAVERN. PASSAGES LEADOFF ";G5$;", EAST AND WEST."
:GOTO1550
800 PRINTG$;"A LARGE CAVERN THAT HAS EXITS";G4$;", SOUTH, EAST AND WES
T.":GOTO1550
810 PRINTG$;"A SMALL CAVERN THE WALLS OF  WHICH ARE A STRANGE RED COLO
UR. YOU CAN MOVE NORTH OR EAST.":GOTO1550
820 PRINTG3$;"A DARK NARROW PASSAGE    UNTIL IT ABRUPTLY ENDS AT A SOL
ID ROCK  WALL. YOU HAVE NO CHOICE BUT TO MOVE TO THE SOUTH.":GOTO1550
830 PRINT"YOU ENTER A SMALL CAVERN THAT HAS A     MASSIVE STALAGTITE H
ANGING FROM THE     CENTRE OF THE ROOF. THE ONLY EXIT FROM  THIS CAVER
N IS ";G5$;".":GOTO1550
840 PRINTG$;"A LARGE OVAL SHAPED CAVERN.  YOU CAN SEE EXITS ";G4$;", E
AST ANDWEST.":GOTO1550
850 PRINTG8$;"A SMALL CAVERN WITH A  LOW ROOF. IN SOME PLACES IT IS SO
 LOW   THAT YOU HAVE TO STOOP TO GET UNDER IT.":GOTO1550
```

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860 PRINTG2$;"A LARGE CAVERN THAT HAS A SOLID ROCK FLOOR. LOOKING AROU
ND YOU SEEA FEW BITS OF DRIED SEAWEED.":GOTO1550
870 PRINTG$;"A SMALL CAVERN THAT HAS EXITS";G7$;" AND SOUTH.":GOTO1550
880 PRINTG8$;"A LARGE CAVERN. LOOKINGAROUND YOU SEE THAT ";G4$;" THE
  CAVERN ENDS AT THE EDGE OF A VERY STEEP CLIFF. YOU COULD KILL YOURSE
LF TRYING TOGET DOWN THERE. YOU CAN SEE A TUNNEL OFF";G6$;".":GOTO1550
890 IFT9=0THENPRINT"YOU CLIMB DOWN THE STEEP CLIFF. IT MUST BE A MIRAC
LE, YOU ARE STILL ALIVE. BUT IDON'T THINK YOU WILL BE ABLE TO CLIMB
BACK UP AGAIN.":T9=1
900 PRINTG$;"A MASSIVE CAVERN THAT APPEARSTO HAVE NO ROOF. THE NORTH W
ALL SLOPES  UP AT ABOUT SIXTY DEGREE'S.":GOTO1550
910 PRINTG2$;"A SMALL CAVERN THAT HAS A VERY HIGH ROOF. LOOKING AROUND
 YOU SEE  EXITS ";G4$;" AND EAST.":GOTO1550
920 IF(N=268)*(T8=1)THENPRINT"YOU WALK ALONG A NORTH SOUTH PASSAGE
UNTIL YOU SEE AN OPEN RUSTY DOOR.":GOTO1550
930 PRINTG3$;"A NARROW PASSAGE UNTIL  YOUR WAY IS BLOCKED BY A LARGE
IRON DOOR":GOTO1550
940 PRINTG$;"A LARGE CIRCULAR CAVERN THAT HAS EXITS ";G4$;", SOUTH AND
 EAST.":GOTO1550
950 PRINTG8$;"A SMALL CAVERN WITH A  LOW ROOF. YOU SEE EXITS ";G4$;",
  SOUTH AND WEST.":GOTO1550
960 PRINT"YOU HAVE WALKED INTO A MASSIVE CAVERN.  THE DIM LIGHT FROM Y
OUR LANTERN CANNOT  PENETRATE VERY FAR INTO THE GLOOMY  DEPTHS OF
THIS HUGE CAVERN.":GOTO1550
970 PRINTG$;"A SMALL ROUND CAVE THAT HAS AHIGH ROOF. LOOKING AROUND YO
U SPOT EXITS";G5$;" AND EAST.":GOTO1550
980 PRINTG3$;"A WIDE PASSAGE UNTIL IT  STOPS AT A DEAD END. BAD LUCK,
YOU WILL HAVE TO GO BACK THE WAY YOU CAME.":GOTO1550
990 PRINTG3$;"A PASSAGE UNTIL YOU REACHA JUNCTION. YOU CAN MOVE ";G5$;
",  EAST OR WEST FROM HERE.":GOTO1550
1000 PRINTG8$;"A SMALL CAVERN THE  WALLS OF WHICH ARE VERY SMOOTH A
ND  BRILLIANT WHITE IN COLOUR. YOU SEE EXITS";G5$;" AND EAST.":GOT
O1550
1010 PRINTG2$;"A SMALL CAVERN THAT HAS  BEEN CARVED OUT OF THE SOLID
ROCK. YOU  CAN SEE EXITS ";G5$;", EAST AND  WEST FROM HERE.":GOTO155
0
1020 PRINTG$;"A SMALL CAVERN THAT HAS ONLY ONE EXIT.":GOTO1550
1030 PRINTG3$;"A NARROW PASSAGE UNTIL  YOU REACH A SHARP CORNER. YOU
CAN MOVE  SOUTH OR WEST FROM THIS POINT.":GOTO1550
1040 PRINT"YOU WALK INTO A SMALL CAVERN THAT HAS  EXITS TO THE NORTH,
 SOUTH AND EAST. TWO STRANGE GUARDS ARE GUARDING THE EXITS TOTHE NORTH
 AND EAST. A LARGE SIGN READS  AS FOLLOWS:-"
1050 PRINT"YOU MAY ASK ONE GUARD ONE QUESTION TO  FIND OUT THE CORREC
T TUNNEL TO TAKE. BUTBE WARNED ONE GUARD TELLS THE TRUTH THE OTHER LIE
S."
1060 PRINT"YOU ASK ONE OF THE GUARDS THE FOLLOWING QUESTION. 'if i ask
ed the other guard  which was the correct tunnel to take  which tun
nel would he point to'. THE  GUARD POINTS TO THE NORTH TUNNEL."
1070 PRINT"'now i know which tunnel to take' YOU  SAY TO YOURSELF. TH
EN YOU SUDDENLY HAVE A LAPSE OF MEMORY AND FORGET.":GOTO1550
1080 PRINTG2$;"A DARK TUNNEL. SUDDENLY A ROCK FALL BLOCKS THE PASSAGE
BEHIND YOU.I HOPE YOU HAVE TAKEN THE RIGHT PASSAGE.":T8=0:YP(155)=13:Y
P(141)=13:GOTO1550
```

```
1090 PRINTG3$;"A PASSAGE UNTIL YOU REACHA SHARP TURN. YOU CAN MOVE WES
T OR SOUTHFROM HERE.":GOTO1550
1100 PRINTG8$;"A LARGE CAVERN WITH A  HIGH ROOF. LOOKING AROUND YOU SE
E EXITS ";G4$;" AND EAST.":GOTO1550
1110 PRINTG$;"A LARGE CAVERN THAT HAS MANY STALAGTITES HANGING FROM TH
E ROOF. YOU  SEE EXITS ";G5$;" AND EAST.":GOTO1550
1120 PRINTG2$;"A SMALL CAVERN THAT HAS   WALLS THAT ARE ALL THE COLOUR
S OF THE   RAINBOW. EXITS ARE ";G4$;" AND EAST":GOTO1550
1130 PRINTG3$;"A LONG NARROW PASSAGE    UNTIL YOU COME TO A SHARP CORN
ER. YOU   CAN MOVE SOUTH OR EAST.":GOTO1550
1140 IFIT(6)<>500THENPRINT"YOU ENTER A SMALL CAVERN. A MEAN LOOKINGSMU
GGLER LOOKS AT YOU FROM A CORNER OF  THE CAVERN.":GOTO1550
1150 PRINT"YOU WALK INTO A SMALL CAVERN. LOOKING   AROUND YOU COME FAC
E TO FACE WITH A MEANLOOKING SMUGGLER. HE LOOKS YOU UP AND   DOWN AND
SEE'S THE ";IT$(6);". HOW  DARE YOU STEAL MY PROPERTY HE SHOUTS ANDINS
TANTLY KILLS YOU.":GOTO1590
1160 PRINTG8$;"A MASSIVE CAVERN. IT ISSO LARGE THAT THE DIM LIGHT FROM
 YOUR   LANTERN CANNOT REACH ANY OF THE WALLS ORROOF.":GOTO1550
1170 IFYP(222)=12THENPRINT"YOU ENTER A SMALL CAVE. LOOKING AROUND  YOU
 SEE THE GHOST OF LONG JOHN SILVER   THE FAMOUS PIRATE. I DON'T THINK
HE IS  GOING TO LET YOU GET PAST.":GOTO1550
1180 PRINT"YOU ENTER A SMALL CAVERN. LOOKING AROUNDYOU SEE A VERY HAPP
Y PIRATE GHOST. HE   SMILES AND WAVES TO YOU AS YOU ENTER.":GOTO170
1190 PRINTG$;"A SMALL CAVERN. THE FLOOR OF THIS CAVERN IS RATHER UNEVE
N AND YOU    HAVE TO WATCH WHERE YOU STEP. EXITS ARE ";G4$;", EAST AND
 WEST.":GOTO1550
1200 PRINTG2$;"A CAVERN THE FLOOR OF     WHICH IS COVERED IN SAND. SUD
DENLY YOU  FEEL YOURSELF SINKING. THIS MUST BE     QUICKSAND. YOU TRY
TO STRUGGLE FREE BUT ONLY GET STUCK EVEN MORE UNTIL YOU      FINALLY V
ANISH FOREVER.":GOTO1590
1210 PRINTG$;"A SMALL CAVERN THAT HAS A    RATHER LOW ROOF. IF YOU WER
E ANY TALLER YOU WOULD PROBABLY KNOCK YOUR HEAD. YOU SEE EXITS ";G4$;"
, SOUTH AND EAST.":GOTO1550
1220 PRINTG$;"A SMALL CAVERN. LOOKING      AROUND YOU SEE EXITS ";G4$;
", SOUTHAND EAST.":GOTO1550
1230 PRINTG8$;"A SMALL CAVERN THAT HASA SMALL POOL OF OIL IN THE MIDDL
E OF THEFLOOR. THE ONLY EXIT IS ";G4$;".":GOTO1550
1240 PRINTG$;"A LARGE CAVERN THAT HAS AN   EXTREMELY HIGH ROOF. STANDI
NG IN THE    MIDDLE OF THIS CAVERN YOU CANNOT SEE    ANY OF THE EXITS.
":GOTO1550
1250 PRINTG$;"A SMALL CAVERN. YOU CAN SEE  EXITS ";G4$;", EAST AND WES
T.":GOTO1550
1260 PRINTG$;"A SMALL PASSAGE THAT RUNS    NORTH AND SOUTH. YOU CAN FE
EL A COOL    BREEZE BLOWING FROM THE NORTH.":GOTO1550
1270 IFT7=1THENPRINT"YOU EMERGE FROM THE CAVES ONTO A NARROW ROCK LEDG
E THAT IS ON THE SIDE OF A    SHEER CLIFF. YOU CAN SEE THE REMAINS OF
 A ROPE BRIDGE BEING SMASHED AGAINST THE ROCKS HUNDREDS OF FEET BELOW
YOU.":GOTO1550
1280 PRINT"YOU HAVE EMERGED FROM THE CAVES ONTO A  NARROW LEDGE THAT I
S PART OF SOME SHEER CLIFFS IN A GORGE. 200 FEET BELOW THE   SEA CRASH
ES AGAINST THE ROCKS. A ROTTINGROPE BRIDGE SPANS THE GORGE.":GOTO1550
1290 IFT7=0THENPRINT"YOU CROSS THE BRIDGE. IT SWAYS AND     CREAKS AS
 YOU CROSS. YOU JUST MANAGE TO GET TO THE OTHER SIDE BEFORE IT
 COLLAPSES.":T7=1:YP(225)=2
```

Back to Basics

A tutorial in BASIC for new programmers

This is part one of a tutorial in BASIC programming for the beginner, although we believe that the more experienced programmer may well glean some useful tit-bits of information from each section.

As it is written specifically for the MZ-700 owner, you won't have to worry whether the particular commands work on your computer.

We will mention DIRECT COMMANDS in the tutorial chapters. This refers to typing a command like PRINT "FRED" onto the screen without a line number in front of it. In a program, the command (sometimes called "indirect") will have a line number at the beginning.

Just while we are talking about line numbers, it is normal to increment line numbers in 10's. This leaves plenty of unused line numbers where additional lines can be added later.

NUMERIC VARIABLES

A variable is a letter to which is allocated a number - for instance

```
A = 5
```

If we type the direct command

```
PRINT A
```

the computer will answer 5. Because the letter A is not in inverted commas, the value of A is printed, not the letter itself.

Now type the following -

```
PRINT "A"
```

Now the computer prints the letter A because of the inverted commas.

If the variable A is used to keep score in a game, the command

```
A = A + 5
```

will result in A now holding a value of 10 (try typing PRINT A now).

Many people are confused initially by variables thinking that certain letters are "reserved" for certain jobs (e.g. S for score or T for time) but this is not the case. Any letter can be used for any task. However, it is a good idea to use letters that indicate the job the variable is doing to aid your memory.

By the way, the Sharp MZ-700 will also accept variables with two letters (e.g. SC) or a letter followed by a number from 0 to 9 (e.g. L7). If you would like to work out how many possible variables this gives you, why not write a program to do it for you.

Variables are used just like numbers within a program. Try the following.

```
10 A = 6
20 B = A + A
30 C = A + B
40 C = C + C
50 PRINT C
```

As this is a "program", just type RUN (followed by the CR key) to make it operate. (For the lazy ones amongst you, the RUN command is preset onto the blue F1 function key).

To vary the program, change the value of A in line 10 or change the + (plus) sign to - (minus), * (multiply) or / (divide). Note the two symbols for multiply and divide on computers.

STRING VARIABLES

The main feature of the string variable is the "dollar" sign after the letter. Type this.

```
N$ = "COMPUTER"
```

Note that the word assigned to the string variable MUST be in inverted commas, otherwise you will be informed ILLEGAL DATA ERROR by the computer. You will always get this error message if you try to mix numeric and string variables.

If you now ask the computer to

```
PRINT N$
```

the response is COMPUTER.

Just like numeric variables, string variables can have two letters or a letter and a number (e.g. QZ$ or K5$).

There are many uses for string variables. For example, say you wanted the line PRESS ANY KEY TO CONTINUE throughout your program. If you assign this line to a string variable, you only need to type the variable - far less effort and saves valuable computer memory space.

```
P$ = "PRESS ANY KEY TO CONTINUE"
PRINT P$
```

Another common use of string variables is in conjunction with the INPUT command. An INPUT is the reverse of a PRINT command. PRINT is when the computer outputs to the screen. The INPUT command is when the information is requested on the screen and the result goes into the computer.

NEW

Just before we type in this next sample program, type the following direct command.

```
NEW
```

This direct command clears any previous program from memory. It is, by the way, irreversible - so always SAVE your program on tape first if you want to keep it.

Now try this simple program.

```
10 INPUT "TYPE YOUR NAME ";N$
20 PRINT
30 PRINT"HELLO ";N$:"
```

Now RUN the program and you will be asked to type your name. The computer will stop and wait for you to type your reply (followed by the CR key). Line 20 is simply to leave a blank line between the INPUT and PRINT statements to increase clarity. In line 30 the word HELLO is printed followed by the name you typed in.

Note - the semicolons in lines 10 and 30 are important. Also, the space left after the INPUT and the word HELLO is there to make the appearance on the screen more acceptable.

From this, you can see that, in this case, whenever the string variable N$ is printed, the computer will be calling the user by name. Friendly chap, isn't he?

By the way, numeric variables can be INPUT in the same way but be careful that you don't type in a letter instead of a number as the response. For instance

```
10 INPUT "TYPE A NUMBER ";X
```

If you answer by typing NINE instead of 9, an ILLEGAL DATA ERROR will be the result. Here is a simple way to stop that happening.

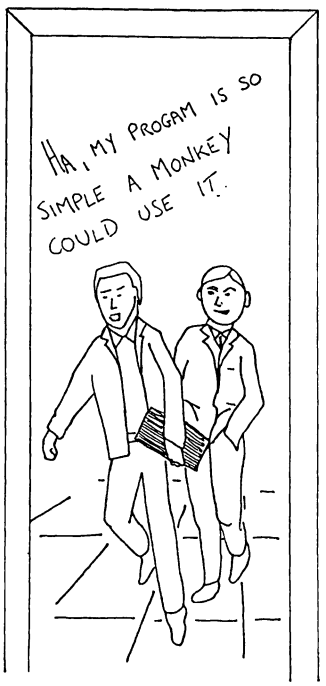
```
NEW
10 INPUT "TYPE A NUMBER ";X$
20 X = VAL(X$)
30 IF X = 0 THEN GOTO 10
40 PRINT "YOU TYPED IN";X
```

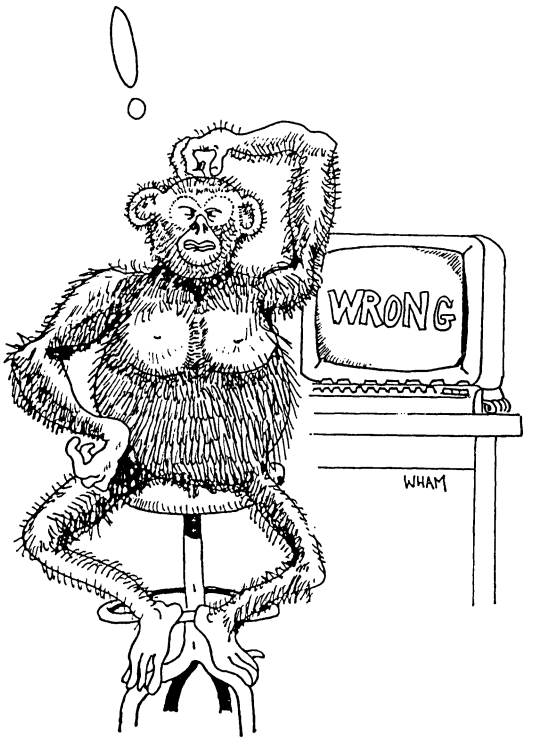
In line 20, the VALue of X$ is checked and since NINE has no value, the computer simply asks the question again (and again.....) until you type in a number. Then line 40 prints the final line.

We will deal more with the handling of string variables in the next issue. It is a fascinating area and well-worth looking into in depth.

If you just can't wait, try this.

```
NEW
10 N$ = "FREDERICK"
20 PRINT LEFT$(N$,4)
30 PRINT RIGHT$(N$,4)
40 PRINT MID$(N$,2,3)
```





Text-File: a PC-1500 utility

by Stephen Wilbourne

TEXT-FILE is a program which allows you to enter, review, edit, print and save text using the Sharp PC-1500 (or Tandy PC-2 computer).

In its standard form the program provides for fifty lines of text, each line being 79 characters long. This requires the computer to have at least an 8 k memory expansion module installed. See PROGRAM CHANGES if your memory size differs.

Enter the program as listed then load from cassette using:

CLOAD <ENTER>

It is strongly recommended that you make a back-up copy of the program on another cassette.

To use the program for the first time, or to clear the text file, type:

RUN <ENTER>

The display will show:

**** SELECT OPTION ****

This signifies that the computer is in the review/select mode, awaiting further instructions. All the functions are selected from this mode, to which the computer returns after completing each task. Generally the display will show a portion of the entered text instead of the above message, although it is still in the review/select mode.

To quit the program use the BREAK key.

To return to the program type:

DEF A

Do not use RUN when returning to the program as this will clear all the text previously entered.

ENTERING TEXT

To enter the text entry mode, press DEF when in the review/select mode. The display will respond with a "?"

A line of text is then typed in, with ENTER being pressed to signify the end of the line. Another "?" prompt will then be displayed to indicate the computer is ready for the next line of text.

To exit the text entry mode, type Z <ENTER> in response to the "?" prompt. The computer will then return to the review/select mode.

You can return to the text entry mode by simply pressing DEF again.

Note that when entering text, the program uses the normal input features of the computer. This means that the line may be edited before the <ENTER> key is pressed by using the cursor keys and the insert/delete functions in the normal way. Also, user-defined reserve key assignments may be used when entering text.

If the line of text to be entered exceeds 79 characters, a flashing cursor will appear over character 80. When <ENTER> is pressed, this last character will be lost.

Caution: when entering text do NOT use quotation marks as the computer interprets these as signifying the end of a line. It is suggested that you use < and > instead of " for quotes.

REVIEWING TEXT

The computer's display can be regarded as a window through which a portion of the entered text can be seen. This window can be moved around using the computer's cursor keys:

< to move the window left
> to move the window right
↑ to move the window up
↓ to move the window down

In addition, keys adjacent to these keys provide similar functions:

- moves to the extreme left of the line

+ moves to the extreme right of the line
M moves up a line, and to the extreme left
N moves down a line, and to the extreme left

Several other alternatives are provided to review text:

! displays the last line entered
" requests a line number to be entered, then displays that line
instructs the computer to scroll through the whole text file
& re-displays the last text display
% provides the line number and space remaining for the line currently displayed.

These examples should help to explain the value of some of the latter commands:

(i) Before entering the edit mode, you wish to check how much space remains on a line. When the required line is being displayed, press <%> to obtain details of the vacant space, then press <&> to return to the line display.

(ii) You are checking the full text, having pressed <#>, when you spot an error. Halt the scrolling display by pressing <BREAK>, then press <DEF> <A> to return to the program. The text display which was present when you pressed the break key can then be recalled by pressing <&>. Editing can now be performed.

EDITING TEXT

The edit mode is selected by pressing <SHIFT> whilst in the review/select mode.

A flashing/reverse cursor will then appear in the computer display. This indicates the position at which the editing will take place. The cursor can be moved across the display by using:

<1> to move left
<3> to move right.

The cursor cannot be moved more than one space beyond the right hand end of a line.

The line of text may be moved independently of the cursor by using:

< to move left
> to move right

Once the cursor is correctly positioned, choose the required edit function by pressing:

<7> to delete a character
<8> to change a character
<9> to insert a character

If you wish to leave the edit mode press <CL>.

If <7> is pressed, the character under the flashing cursor will be deleted and the text to the right of the cursor will be moved left to fill the vacant space. Further characters can be deleted by pressing <7> again. Alternatively, other edit functions may be selected. The program will remain in the edit mode until <CL> is pressed.

If <8> is pressed, the cursor will freeze in the reverse display and the next character entered will replace the character under the cursor. The cursor will then move one place to the right and again freeze. The character now under the cursor can now be changed, or you can press <CL> to stop further changes and leave the edit mode.

If <9> is pressed, the cursor will freeze in the reverse display and the next character entered will be placed in the cursor's current position, the cursor and text to the right of it being moved one space to the right. Further characters can now be inserted, or you can press <CL> to stop further insertions and leave the edit mode. If you wish to insert text at the end of a line, initially place the cursor over the space at the immediate end of the line before pressing <9>.

Note that in character change and insert functions, the entered characters may involve more than one keystroke, e.g. lowercase letters or punctuation. This is handled by the program without problem.

It is suggested that character editing is performed away from the display window ends so that you can most easily view the resulting changes.

In addition to these character edit functions, the two line edit functions given below may also be selected after the edit mode itself has been selected by pressing <SHIFT> :

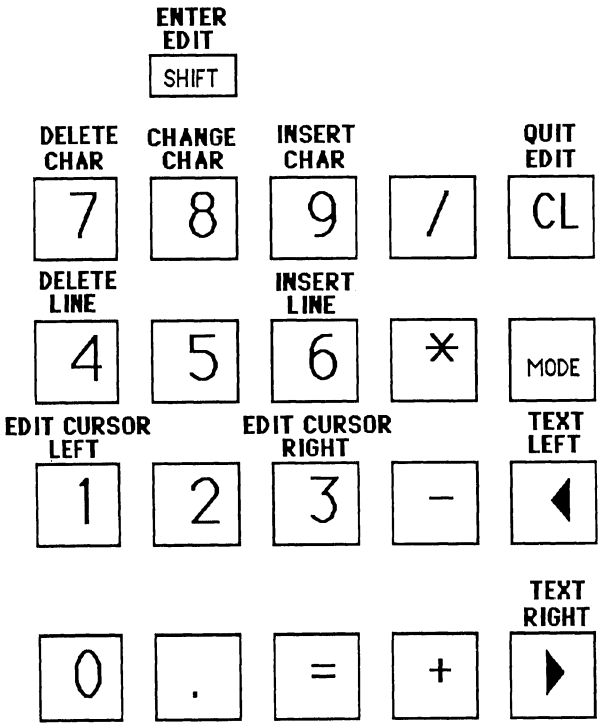
<4> to delete a line
<6> to insert a line

If <4> is pressed, the computer will request the line number of the line to be deleted. After deleting the line, the program will return to the review/select mode. If you enter a number higher than the last line number, an error message will be displayed and the review/select mode will be entered. (This can be useful if you accidentally select the line edit function and wish to escape.) Line numbers may be obtained by pressing <%> in the review/select mode whilst the line is displayed. Alternatively, if you want to delete the last line you can enter <L> in response to the line number request.

If <6> is pressed, the program will request the line

number for the line after which you wish to enter a line. It will then request you to enter the new line. After entry, the program will return to the review/select mode with the new line displayed.

The comments made above regarding line numbers apply to the line insert function as well as the line delete function.



EDIT MODE KEY ASSIGNMENTS

PRINTING TEXT

The text printing function is selected by pressing <$> whilst in the review/select mode.

The program will ask whether you want to print all the text file. If the answer is <N>, the program will ask for the first and last line numbers for the section you wish to print. Again, you may enter <L> instead of the last line number.

The program then asks if you wish it to print in a compressed format. If you answer <Y> to this question, then text lines will be printed one after the other, without commencing a new print line for each stored text line. This often gives a neater printout when the narrow computer printer is used.

If you use compressed print format, a new print line may be forced be entering an empty text line in your stored text. This caused the program to respond with a carriage return and line feed.

If a full-width printer is attached to the computer via a parallel interface, the program will print the stored text out as full-width lines i.e. each stored line will print on a separate line provided the compressed format is not selected.

When using the narrow printer, changes to CSIZE and COLOR can be made by pressing <BREAK>, making the change, then returning to the program by using <DEF> <A>.

```
This is a short pr
ogram showing the
difference between
NORMAL and COMPRES
SED
print modes.

As you can see, th
e COMPRESSED mode
allows you to run
sentences from one
 line
to the next, but s
till have a neat p
rintout.

What do you think?
```

NORMAL PRINT

```
This is a short pr
ogram showing the
difference between
NORMAL and COMPRES
SED print modes.
As you can see, th
e COMPRESSED mode
allows you to run
sentences from one
 line to the next,
 but still have a
neat printout.
What do you think?
```

COMPRESSED PRINT

SAVING TEXT

Text may be saved and loaded from cassette by pressing:

<U> to save text
<I> to load text

whilst in the review/select mode.

In both cases, the program will request a filename to be entered. It is assumed that you have a cassette player ready in the appropriate mode (record or play).

As the program will save or load the entire text file, whether or not you have entered text into the whole file area, the procedure is quite slow. It is therefore not recommended that you save to cassette if you have only entered a small amount of text.

PROGRAM CHANGES

The program is set up to handle 50 lines of text. For a computer with an 8k memory module installed this leaves 2.8k available for other programs. This space could instead be used to extend the text file from 50 to 85 lines.

If your computer has only a 4k memory expansion, then it will only be able to handle a text file of 33 lines.

Memory expansions larger than 8k can obviously handle more than 85 text file lines.

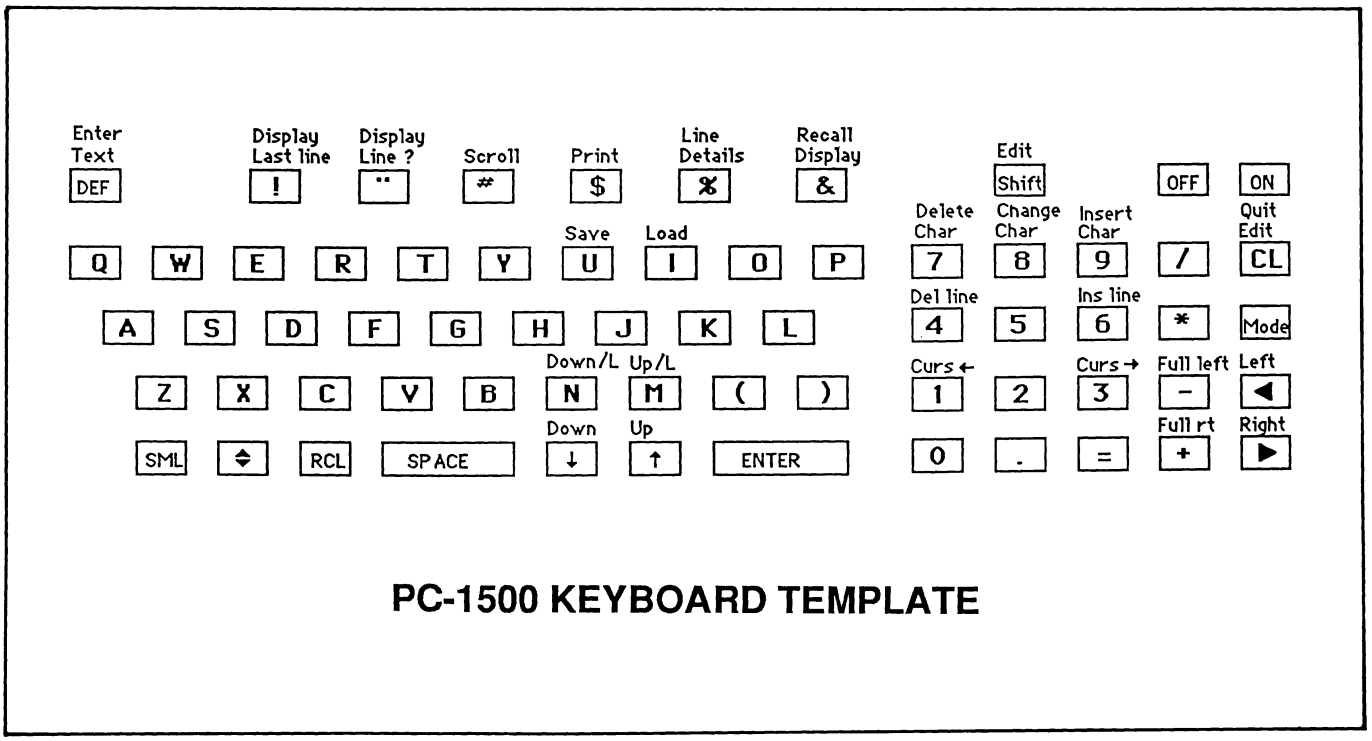
To change the text file line size, change the value of the variable Q in program line 900. The value should be set to one more than the required file size. The value is initially set to 51. The program must be entered by using RUN after making any change to Q.

Line 900 also sets variable V to a value of 1. Increasing the size of V will slow down the speed of scrolling obtained when the <#> key is pressed. In addition, the delay in scrolling which occurs when the start of a line is displayed may be varied by changing the factor by which V is multiplied in program line 1310.

```
    1 PAUSE "         TEXT-FILE"
    2 PAUSE "(C)  R A Z O R - S O F T"
    3 REM     VERSION 3.2    6/9/83
   10 CLEAR :GOTO 900
   80 IF N<0LET N=0:BEEP 1
   90 IF N>LLET N=L+1:BEEP 1
  100 G=LEN A$(N)
  105 IF P>79LET P=79
  110 IF P<1LET P=1:BEEP 1
  120 M=G-P+1:IF M<0LET M=0:BEEP 1
  130 PRINT MID$ (A$(N),P,M)
  140 IF Z=0GOTO 1010
  150 IF S=0RETURN
  155 IF T>MLET T=M
  160 IF T<0LET T=0
  170 IF T>25LET T=25
  180 H=T*6-1
  190 FOR I=HTO H+6
  200 IF I<0NEXT I
  210 G(I-H)=127-POINT I
  220 NEXT I
  230 IF H<0GOTO 250
  240 GCURSOR H:GPRINT G(0);G(1);G(2);G(3);G(4);G(5);G(6):RETURN
  250 GCURSOR 0:GPRINT G(1);G(2);G(3);G(4);G(5);G(6):RETURN
  900 Q=51:V=1
  910 DIM A$(Q)*79,B$(0)*79,C$(0)*79,G(7)
  920 L$="OUT OF RANGE":M$="NO MORE ROOM":T=0
  930 A$(0)="TOP OF TEXT":A$(Q)="BOTTOM OF TEXT":A$(1)=A$(Q)
 1000 "A"CLS :W=STATUS 3-11:POKE W,&FD,&88,&BE,&E2,&43,&FD,&0A,&41,&49
,&00,&9A
 1005 WAIT 0:Z=0:K=0:PRINT "****  SELECT  OPTION  ****"
 1010 K=ASC INKEY$ :IF K=0GOTO 1010
 1020 IF K=10LET N=N+1:GOTO 90
 1021 IF K=11LET N=N-1:GOTO 80
 1022 IF K=78LET N=N+1:P=1:GOTO 90
 1023 IF K=77LET N=N-1:P=1:GOTO 80
 1024 IF K=8LET P=P-1:GOTO 100
 1025 IF K=12LET P=P+1:GOTO 100
 1026 IF K=45LET P=1:GOTO 100
 1027 IF K=43LET P=LEN A$(N)-25:GOTO 100
 1028 IF K=27GOTO 1100
 1029 IF K=17LET P=1:N=L:GOTO 100
 1030 IF K=18GOTO 1200
 1031 IF K=19GOTO 1300
 1032 IF K=22GOTO 100
```

```
1033 IF K=21GOTO 1400
1034 IF K=20GOTO 1500
1035 IF K=1GOTO 2000
1036 IF K=85GOTO 1600
1037 IF K=73GOTO 1700
1038 GOTO 1010
1100 FOR I=1TO 10:NEXT I
1110 IF L=Q-1PRINT M$:GOTO 1010
1120 L=L+1:A$(L)="":INPUT A$(L)
1130 A$(L+1)=A$(Q)
1140 IF (A$(L)="Z")+(A$(L)="z")LET A$(L)=A$(L+1):L=L-1:GOTO 1000
1150 GOTO 1100
1200 INPUT "DISPLAY LINE NO. ? ";Y
1210 IF (Y<1)+(Y>L)PRINT L$:GOTO 1010
1220 N=Y:P=1:GOTO 100
1300 Z=1:S=0:FOR N=1TO L
1310 P=1:GOSUB 100:FOR I=1TO 15*V:NEXT I
1320 FOR P=2TO LEN A$(N)
1330 FOR I=1TO V:NEXT I
1340 GOSUB 100:NEXT P:NEXT N
1350 Z=0:N=L+1:P=1:GOTO 100
1400 PRINT "LINE";N;"    ";79-LEN A$(N);"  CHARS. LEFT":GOTO 1010
1500 INPUT "PRINT FULL TEXT? (Y/N) ";A$
1510 IF A$="Y"LET A=1:B=L:GOTO 1540
1520 INPUT "FIRST LINE = ";A:IF (A<1)+(A>L)PRINT L$:GOTO 1010
1530 INPUT "LAST LINE = ";B:IF (B<1)+(B>L)PRINT L$:GOTO 1010
1540 INPUT "COMPRESSED TEXT? (Y/N) ";B$
1550 CLS :FOR I=ATO B
1560 IF B$<>"Y"LPRINT A$(I):GOTO 1590
1570 IF A$(I)=""LPRINT " ":GOTO 1590
1580 LPRINT A$(I);
1590 NEXT I:LPRINT " ":LF 2:GOTO 1000
1600 INPUT "FILE NAME FOR CSAVE? ";S$
1610 CLS :PRINT #S$;L,A$(*):GOTO 1000
1700 INPUT "FILE NAME FOR CLOAD? ";T$
1710 CLS :INPUT #T$;L,A$(*):GOTO 1000
2000 BEEP 1:S=1:Z=1
2010 GOSUB 100:R=0
2020 R=ASC INKEY$
2030 IF R=8LET P=P-1:GOTO 2010
2040 IF R=12LET P=P+1:GOTO 2010
2050 IF R=24GOTO 2400
2060 IF (R<49)+(R>57)GOTO 2010
2070 ON (R-48)GOTO 2100,2010,2200,2300,2010,2500,2600,2700,2800
2100 T=T-1:GOTO 2010
2200 T=T+1:GOTO 2010
2300 BEEP 1:INPUT "DELETE WHICH LINE? ";D
2310 IF (D<1)+(D>L)PRINT L$:GOTO 2340
2320 CLS :FOR I=DTO L:A$(I)=A$(I+1):NEXT I
2330 IF L<>(Q-1)LET A$(L+1)=""
2335 L=L-1:S=0:Z=0:GOTO 1000
2340 S=0:Z=0:GOTO 1010
2400 BEEP 1:S=0:Z=0:GOTO 100
2500 BEEP 1:IF L=Q-1PRINT M$:GOTO 2340
2510 INPUT "INSERT AFTER LINE NO. ? ";F
```

```
2520 IF (F<1)+(F>L)PRINT L$:GOTO 2340
2530 FOR I=L+1TO F+1STEP -1:A$(I+1)=A$(I):NEXT I
2540 A$(F+1)="":INPUT "ENTER NEW LINE:",A$(F+1)
2550 N=F+1:P=1:L=L+1:GOTO 2400
2600 BEEP 1:GOSUB 2640
2610 A$(N)=B$(0)+C$(0)
2620 GOTO 2010
2640 B$(0)=LEFT$ (A$(N),P+T-1)
2660 IF P+T>=GLET C$(0)="":GOTO 2680
2670 C$(0)=RIGHT$ (A$(N),G-P-T)
2680 RETURN
2700 BEEP 1
2705 GOSUB 2640
2710 CALL W,X$
2720 IF ASC X$=24GOTO 2400
2730 A$(N)=B$(0)+X$+C$(0)
2740 T=T+1:GOSUB 100:IF R=56GOTO 2705
2750 GOTO 2805
2800 BEEP 1
2805 IF G=79PRINT M$:GOTO 2340
2810 GOSUB 2640
2820 IF P+T<=GLET C$(0)=RIGHT$ (A$(N),G-P-T+1)
2830 GOTO 2710
```



PC-1500 KEYBOARD TEMPLATE

Review of Filecards

by Derek Clarke

This program has been a part of my life for weeks now. At the request of Stephen Wilbourne, the author of Filecards, I have been testing it to destruction and I think that he was beginning to wonder what other obscure, finicky comment I could come up with next.

Suffice it to say, as far as I can see, there is one small screen display which does not clear but as that does not affect the running of the program it does not matter.

The program simulates a pack of cards in a box and to anyone who has kept a "tickler" diary that will be familiar. The number of cards will vary according to the amount of information you wish to store. As you cannot alter the card format once it has been entered it is as well to have a firm idea of your requirements from the start.

Each line is of 40 characters in length and this represents one field, however, using formatting characters it is possible to spread a field over a number of lines. This means that information such as addresses can be properly laid out.

Being written in Machine Code the sort routine is one of the fastest that I have ever seen. It is written to sort on two fields simultaneously and is extremely efficient.

One word of caution - ensure that all information is entered in a uniform manner otherwise sorting can be affected. The routine is very literal in its decisions and will use every character in making its choices. As an example - I puzzled for many hours as to why I could not get one particular sort to work when all other combinations worked perfectly. It took Stephen's expertise to point out that on a few cards I had left formatting characters from my numerous experiments. These did not print up on the screen on the final display of the individual cards but as they were in the original format they naturally had their effect.

There is provision in the print routine for a pause to enable one to change pens or paper which gives rise to my earlier comment about the screen display. Having once resumed printing the screen display giving the pause instructions does not clear until the menu is re-displayed.

The instructions are very clear and concise, operation is simple once the few formatting directions are mastered and some time has been spent experimenting with the program.

I recommend that you note on your data cassette the number of fields that you have used for that particular set of data because the first question that is asked of you by the program is to provide the number of fields to be used. If the number quoted by you is not the same as that found on the tape a message appears on the screen

and the computer halts - firstly telling you how many fields it has found in the data format.

Going back to the start is not too difficult for any one who has read the accompanying notes thoroughly and uses a little common sense but it is not spelled out how to recover from the position of having conflicting fields between the data and your memory!

Having spent many hours with the program I can thoroughly recommend it to any one who has to keep lists of names for information, particularly when those lists need sorting in any manner.

Amendments to cards can be carried out quite easily and individual cards can be very quickly sorted, amended or printed. The program is ideal for mailing lists as the address can be readily formatted and labels printed according to name, town, postcode or which ever combination is required.

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